3.14 Transportation and Traffic

This section analyzes the proposed project's and non-clustered scenario's potential impacts on transportation and traffic. The analysis describes the existing circulation patterns in the vicinity of the project site, and evaluates the traffic impacts based on the results of the *Saddle Crest Traffic Impact Study* (RK Engineering Group, Inc., 2011; Appendix K), and proposes mitigation measures as needed. The traffic study was prepared in coordination with the County of Orange. The traffic study includes an evaluation of study area intersections and roadway segments of Santiago Canyon Road, with and without the project, based upon the County's Growth Management Plan (GMP) TIM, as it is proposed to be amended. This section also includes a discussion of traffic under the GMP TIM without the amendment, as well as an analysis under the GMP TIM as it is proposed to be amended.

3.14.1 Environmental Setting

Regulatory Framework

Congestion Management Program Compliance

Based on the approval of Proposition 111 in 1990, regulations require the preparation, implementation, and annual updating of a Congestion Management Program (CMP) in each of California's urbanized counties. One required element of the CMP is a process to evaluate the transportation and traffic impacts of large projects on the regional transportation system. That process is undertaken by local agencies, project applicants, and traffic consultants through a transportation impact report usually conducted as part of the CEQA project review process.

The purpose of the state-mandated CMP is to monitor roadway congestion and assess the overall performance of the region's transportation system. Based upon this assessment, the CMP contains specific strategies and identifies proposed improvements to reduce traffic congestion and improve the performance of a multi-modal transportation system. Examples of strategies include increased emphasis on public transportation and rideshare programs, mitigating the impacts of new development and better coordinating land use and transportation planning decisions.

None of the roadways directly serving the project site are within the CMP system. The only CMP roadway in the vicinity of the project is El Toro Road, located south of the SR 241. The criteria for which a project is subject to the regulations as set forth in the CMP are determined by the trip generation potential for the project. The applicable trip-generation thresholds are 2,400 daily trips, or 200 peak hour trips. Neither the proposed project's nor the non-clustered scenario's estimated trip generation, described below, would exceed the CMP thresholds.

Destination 2030: 2008 Regional Transportation Plan

Destination 2030 is the RTP for the member counties of SCAG. The RTP focuses on improving the balance between land use and current, as well as future, transportation systems. SCAG

develops, maintains, and updates the RTP on a three-year cycle.[1] According to the 2008 RTP, there are no public transit services currently within or on the perimeter of the project area. The 2008 RTP proposes the extension of SR 241 to Interstate 5 and the addition of travel lanes to SR 241. Because the proposed project would require a General Plan Amendment, SCAG considers the project to be regionally important and, therefore, requires that the EIR consider the consistency of the proposed project with SCAG's regional plans. Impacts 3.14.1 and 3.14.2, below, analyzes project compliance with regional plans.

County of Orange General Plan – Transportation Element

The Orange County General Plan Transportation Element provides information about the transportation needs of the County and states goals, objectives, and policies to meet those needs. The General Plan Transportation Element also states acceptable LOS for the County. Currently, the County deems LOS C an acceptable LOS, but accepts LOS D at County intersections during peak hours. The goals and policies in the Transportation Element generally involve the provision of a circulation system that is safe, convenient, efficient, and integrated with the surrounding jurisdictions. Below are goals, objectives and policies that are applicable to the proposed project.

Circulation Plan

Policy 1.2 Apply conditions to land use development projects to ensure that the direct and cumulative impacts of these projects are mitigated consistent with established level of service policies.

Objective 2.1 Plan, develop and implement a circulation system in the unincorporated areas, which is consistent with the Master Plan of Arterial Highways and circulation plans of adjacent jurisdictions.

Policy 2.4: Apply conditions to development projects to ensure compliance with OCTA's transit goals and policies.

Policy 2.5: Apply conditions to development projects to ensure implementation of the Circulation Plan as applicable.

Policy 3.1 Maintain acceptable levels of service on arterial highways pursuant to the Growth Management Element of the General Plan.

Policy 3.2 Ensure that all intersections within the unincorporated portion of Orange County maintain a peak hour level of service "D", according to the County Growth Management Plan Transportation Implementation Manual.

Policy 3.3 Evaluate all proposed land use phasing plans for major development projects to ensure maintenance of acceptable Levels of Service on arterial highway links and intersections.

Policy 5.1 Establish "traffic impact fees" for application to county development projects with measureable traffic impacts, as defined in the Growth Management Element

[1] SCAG is in the process of developing the 2012 RTP.

of the General Plan. These fees may serve as local matching funds for Orange County Measure "M", state and federal highway funding programs.

Policy 5.2 Use uniform analytical methods, in conformance with the Growth Management Plan, Measure M, and the Congestion Management Program (CMP), to aid in transportation planning and impact evaluation and support the development and utilization of sub-area models to address detailed transportation issues.

Policy 5.3 Use adopted Orange County forecasts for all projections of future year population, housing employment, and other socioeconomic data to assure consistency among other General Plan Elements.

Policy 5.5 Require as conditions of approval that the necessary improvements to arterial highway facilities, of which the project contributes measurable traffic, be constructed and completed within a specified time period or ADT/peak hour milestone to attain a Level of Service "D" at intersections under the sole control of the County. LOS "C" shall be maintained on Santiago Canyon Road links until such time as uninterrupted segments of the roadway (i.e., no major intersections) are reduced to less than three miles.

Policy 5.7 Require, as a condition of approval, that a development mitigation program, development agreement or developer fee program be adopted to ensure that development is paying its fair share of the costs associated with that development pursuant to Policy 5.1.

Objective 6.5 Enhance the efficient movement of vehicles through the circulation system by providing bike lanes and restricting parking on arterials whenever feasible.

Objective 6.7 Require developers of more than 100 dwelling units, or 25,000 square feet of non-residential uses to: a) demonstrate consistency between the local transportation facilities, services, and programs, and the regional transportation plan.

Bikeways Plan

Policy 1.11: Design and construct bikeways in accordance with County and Caltrans standards in order to maximize safety and minimize potential conflicts with pedestrians and motor vehicles.

Scenic Highway Plan

Goal 1: Preserve and enhance unique or special aesthetic and visual resources through sensitive highway design and the regulation of development within the scenic corridor.

Objective 1.4: Preserve established Scenic Highways in order to protect the existing scenic qualities of these corridors.

Objective 1.6: Require sufficient setback from the scenic corridor, where feasible, for the purpose of preserving the corridor's scenic qualities.

Policy 1.1: Require preparation and approval of highway plans demonstrating project consistency with the intent of the Scenic Highway Component, prior to tract map recordation. This can be accomplished through the subdivision, discretionary permit, Feature or Area Plan review process.

Policy 1.7: Incorporate pedestrian, equestrian, and bicycle trails into the right-of-way of scenic highways as designated by the County's Bikeways Plan and the Master Plan of Regional Riding and Hiking Trails.

County of Orange General Plan – Growth Management Element

The purpose of the Growth Management Element of the General Plan is "to mandate that growth and development be based upon the County's ability to provide an adequate circulation system" as well as other support services and facilities. The TIM describes the procedures to evaluate traffic impacts. Below are goals, objectives and policies that are applicable to the proposed project.

Goal 1: Reduce traffic congestion.

Goal 2: Ensure that adequate transportation facilities, public facilities, equipment, and services are provided for existing and future residents.

Objective 2: The circulation system shall be implemented in a manner which achieves the established Traffic Level of Service Policy.

Policy 3: It is the policy of the County that within three years of issuance of the first use and occupancy permit for a development project or five years of the issuance of a finished grading permit or building permit for said development project, whichever occurs first, that the necessary improvements to arterial highway facilities, to which the project contributes measurable traffic, are constructed and completed to attain Level of Service (LOS) "D" at intersections under the sole control of the County. LOS "C" shall also be maintained on Santiago Canyon Road links until such time as the uninterrupted segments of the roadway (i.e., no major intersections) are reduced to less than three miles.

The "County of Orange Growth Management Element Transportation Implementation Manual" which was adopted by the Board of Supervisors in June 1989 and, as may subsequently be amended, establishes the procedures and local parameters for the implementation of this policy. Amendments to the manual shall be approved by the Board of Supervisors only after a public hearing.

Policy 4: Comprehensive traffic improvement programs shall be established to ensure that all new development provides necessary transportation facilities and intersection improvements as a condition of development approval. Participation in such

programs shall be on a pro-rata basis and shall be required of all development projects except where an increased level of participation exceeding these requirements is established through negotiated legal mechanisms, such as a public facilities development agreement.

Foothill/Trabuco Specific Plan

The F/TSP references the County General Plan Growth Management Element with respect to analyzing traffic on Santiago Canyon Road. Goals and objectives of the F/TSP related to riding and hiking trails, and bikeways are provided in Section 3.13, *Recreation*, of this Draft EIR. Goals and objectives relating to traffic and transportation which are applicable to the proposed project are provided below.

Goal 1d: To provide for a circulation system and other infrastructure adequate to serve the ultimate level of development permitted.

I.C.2. Specific Plan Objectives

a. Area-wide Objectives

Objective 1.d Minimize the intrusion of development and landform alteration within the viewsheds of Live Oak/Trabuco Canyon Road and Santiago Canyon Road without precluding development which blends into the natural terrain and does not require excessive landform alteration.

Objective 3.d Provide a development cap for each property based upon circulation constraints. Recognize that the level of development permitted by the development cap is not necessarily achievable on each individual property and that the ultimate number of dwelling units permitted shall be dependent on compliance with Land Use District regulations, the Development and Design Guidelines and the Resources Overlay Component as demonstrated through area plan and/or site plan review.

Objective 5a: Provide for a local riding and hiking trail system which includes connections to Regional Riding and Hiking Trails as described on the Master Plan of Regional Riding and Hiking Trails of the Recreation Element of the General Plan.

b. Planning Area-Specific Objectives

1.c. Upper Aliso Planning Area, Circulation/Infrastructure:

Objective c.3: Minimize the number of access point on Live Oak Canyon Road and Santiago Canyon Road.

Objective c.4: Prohibit encroachment of development into the right-of-way reservation swaths for Santiago Canyon/El Toro Road and Live Oak Canyon Road. If development occurs subsequent to the selection of final alignments for these roads, development shall be located outside of, and set back from, the final alignment.

Circulation Plan - 2.0 - "Santiago Canyon Road changes names to El Toro Road at Live Oak Canyon Road. Santiago Canyon Road is designated as a four-lane primary arterial highway on the County's Master Plan of Arterial Highways, while El Toro Road is designated as a six-lane major arterial highway. The projected capacity of Santiago Canyon and El Toro Roads with the ultimate improvements is sufficient to accommodate traffic generated from the Specific Plan Area.

An EIR is currently being prepared for the widening of Santiago Canyon Road. Although traffic generated within the Specific Plan Area will impact future traffic volumes on Santiago Canyon/El Toro Road and, therefore, cumulatively contribute to the need for road widening, land uses within the Specific Plan Area alone do not necessitate road widening."[2]

Resources Overlay Component - Scenic Highway Corridors.

a. Prior to recordation of a final tract/parcel map or the issuance of grading permits, whichever comes first, each affected applicant shall offer for dedication in fee or preservation easements to the County of Orange or its designee those areas within the required scenic roadway setback area as identified in the Resources Overlay Component (Exhibit II-7) and further defined below, in a manner meeting the approval of the Manager, EMA, Harbors, Beaches and Parks/Program Planning Division.[3]

b. The following development setbacks from the ultimate right-of-way shall be required for designated scenic highways: 2) From Santiago Canyon Road. One-hundred (100) feet minimum.

c. Applicants for development projects which are visible from any road designated in the Resources Overlay Component as a scenic corridor shall be required to submit a detailed viewshed analysis of the proposed development for consideration by the Planning Commission in conjunction with any area plan, site development permit, or use permit.

Phasing Component 1.a - Growth Management Plan Element

All development within the Specific Plan Area shall be required to be phased within a manner which is consistent with the requirements of the Growth Management Plan (GMP) Element. The GMP Traffic Level of Service Policy states:

> It is the policy of the County that within three years of the issuance of the first use and occupancy permit for a development project or five years of the issuance of a finished grading permit or building permit for said development project, whichever occurs first, that the necessary improvements to arterial highway facilities, to which the project contributes measureable traffic, are constructed

[2] The EIR referred to in the F/TSP was never certified and the proposed widening project was abandoned.
[3] It should be noted that subsequent to completion of the F/TSP, any approval will now be required by OC Planning, in consultation with OC Parks, not EMA-Harbors, Beaches and Parks/Program Planning Division.

and completed to attain Level of Service (LOS) "D" at intersections under the sole control of the County. LOS "C" shall also be maintained on Santiago Canyon Road links until such time as the uninterrupted segments of the roadway (i.e., no major intersections) are reduced to less than three miles.

The GMP Transportation Implementation Manual, adopted by the Board of Supervisors in June 1989 to clarify the intent of the Traffic Level of Service Policy of the GMP Element, includes procedures and parameters for implementation of this policy. The manual describes how the general traffic policies of the GMP Element are to be implemented and includes: 1) a listing of projects which are exempt from the GMP requirements; 2) acceptable traffic analysis methodologies; 3) minimum requirements of GMP traffic reports; and 4) the traffic monitoring surveys the County will conduct to determine system performance.

All applicants of project proposals which are not exempt from the GMP requirements shall be required to prepare a traffic report, in accordance with the requirements of the GMP Transportation Implementation Manual, to demonstrate compliance with the GMP Traffic Level of Service Policy. Individual project proposals will be reviewed on a case-by-case basis and shall be phased to ensure consistency with the GMP requirement.

As explained below, with respect to analytical procedures for Santiago Canyon Road, the TIM states that for Growth Management Element traffic analyses, the HCM methodology for rural two-lane highways shall be used. An amendment to the TIM is proposed to provide for the use of the v/c ratio methodology rather than the HCM methodology.

Road Fee Programs

In accordance with the County's General Plan and the F/TSP, the project is subject to three established Road Fee Programs. The applicable road fees programs are identified below.

Roadway Fee Programs (as of 10/31/11)

Programs	Cost
Foothill/Eastern Transportation Corridor Road Fee Program--Zone A	$4,976 / Single-Family Dwelling Unit
Foothill Circulation Phasing Plan (non-participating FCPP Landowners) – Zone 4	$3,578 / Single-Family Dwelling Unit
Santiago Canyon Road Major Thoroughfare and Bridge Fee Program and Safety Improvement Program	$662 / Single-Family Dwelling Unit

Existing Conditions

Study Area

The project site is located on the north side of Santiago Canyon Road, south of Modjeska Grade Road and north of Ridgecrest Road. **Figure 3.14-1** illustrates the site location and traffic analysis

study area (and study area intersections). The study area includes the following intersections, and segments of Santiago Canyon Road:

- Portola Parkway at Glenn Ranch Road
- Portola Parkway at SR 241 Toll Road Ramps
- Santiago Canyon Road at Modjeska Grade Road
- Santiago Canyon Road at Project Access (*With-Project Scenarios Only*)
- Santiago Canyon Road / El Toro Road at Live Oak Canyon Road
- El Toro Road at Glenn Ranch Road
- Marguerite Parkway / Saddleback Church at El Toro Road
- Portola Parkway / Santa Margarita Parkway at El Toro Road
- Santiago Canyon Road north of Modjeska Grade Road
- Santiago Canyon Road south of Modjeska Grade Road
- Santiago Canyon Road north of Live Oak Canyon Road

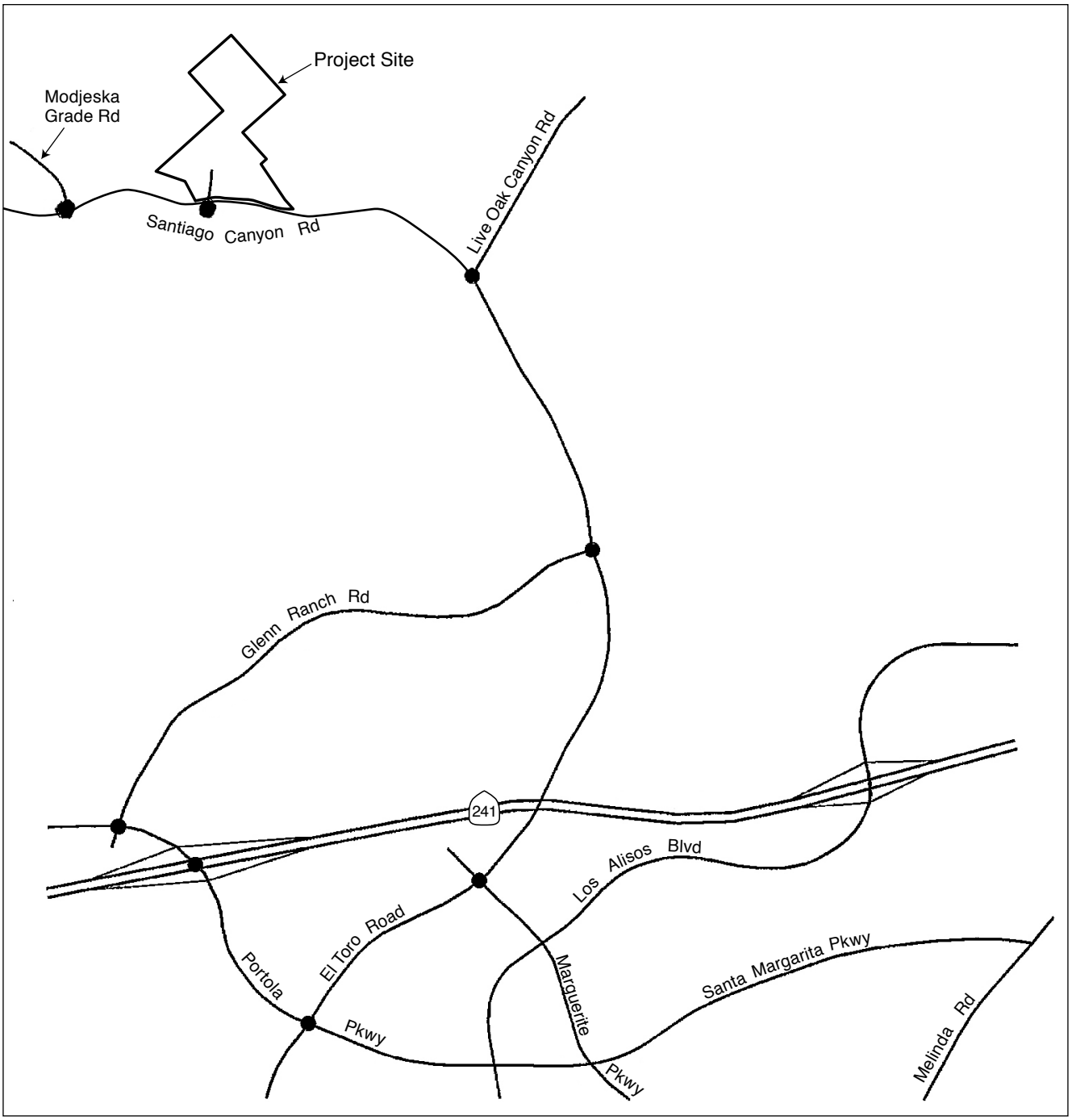
Based on OCTA's Master Plan, Santiago Canyon Road is planned as a four-lane divided primary highway (see **Figure 3.14-2**). Currently, the road is a two-lane highway with left- and right-turn lanes at some intersections.

None of the study area intersections are part of the 2009 Orange County CMP. The only CMP highway in the vicinity of the project site is El Toro Road, located south of SR 241. Neither the proposed project nor the non-clustered scenario would contribute 1,600 or more daily trips to El Toro Road, which means it would not have a significant impact to this roadway based on CMP criteria.

Methodology

Signalized Intersections: Based upon County of Orange policy within the TIM, the methodology used to assess the operation of the signalized intersections is Intersection Capacity Utilization (ICU).[4] To calculate the ICU, the volume of traffic using the intersection is compared with the capacity of the intersection. ICU is usually expressed as a ratio. This ratio represents that portion of the hour required to provide sufficient capacity to accommodate all intersection traffic if all approaches operate at capacity. LOS and associated volume-to-capacity ratios are shown in **Table 3.14-1**.

[4] Caltrans requested that the intersection of the County highways with state highways be analyzed using the HCM methodology, but doing that would be in conflict with the policy of County of Orange and the OCTA.



SOURCE: RK Engineering Group, 2011.

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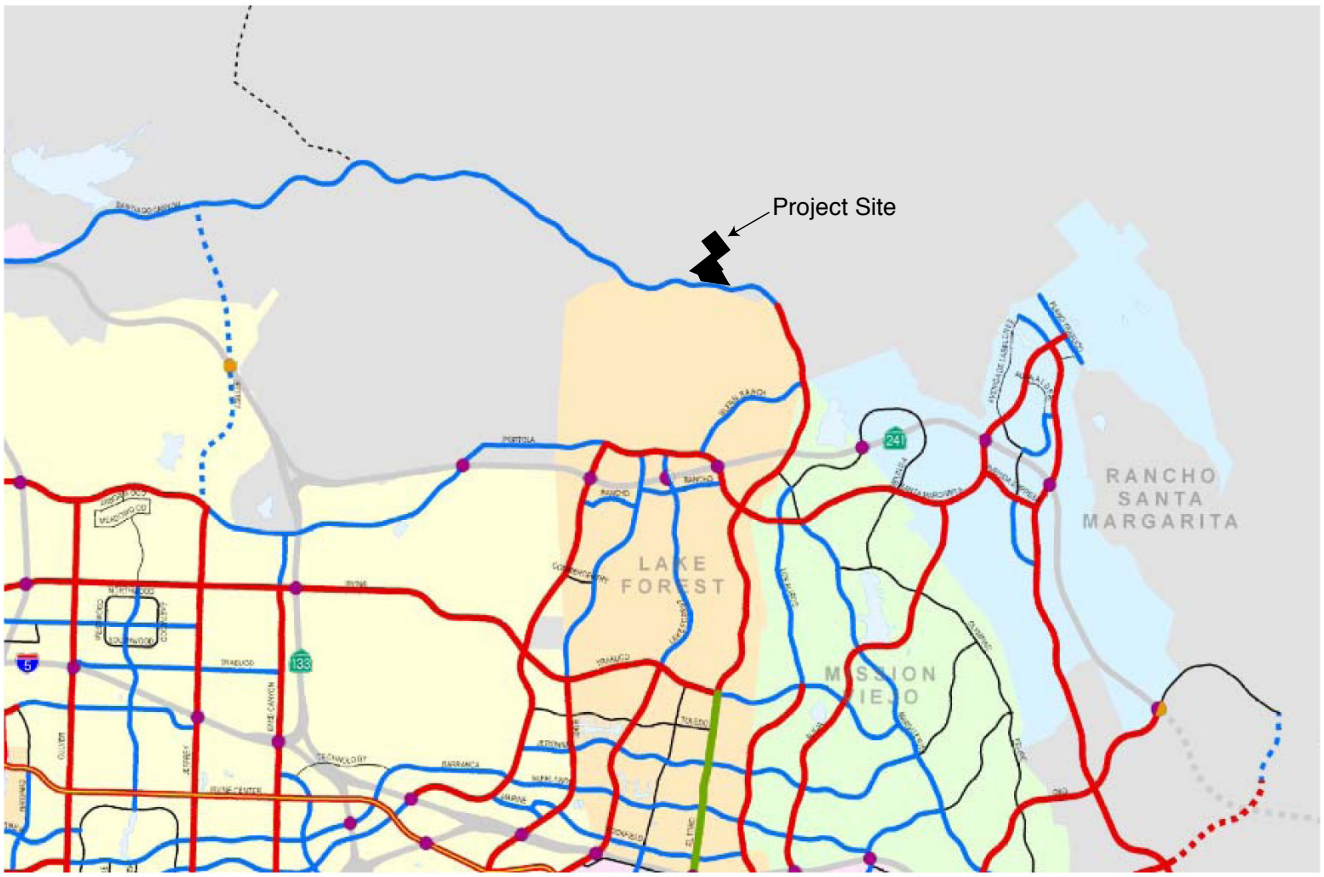
Figure 3.14-1
Study Area Intersections



ARTERIAL HIGHWAYS

ESTABLISHED ALIGNMENT	PROPOSED ALIGNMENT	
———	- - - -	PRINCIPAL
———	·····	MAJOR
———	·····	PRIMARY
———	·····	SECONDARY
———	·····	COLLECTOR
———		ROADS OUTSIDE OF OC SHOWN FOR CONTINUITY *
———		FREEWAY *
- - - -		TRANSPORTATION CORRIDOR *
———		SMART STREET 8 LANE
———		SMART STREET 6 LANE
———		SMART STREET 4 LANE
●		EXISTING INTERCHANGE
●		PROPOSED INTERCHANGE
———		RIGHT-OF-WAY RESERVE

N

SOURCE: RK Engineering Group, 2011.

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Figure 3.14-2
OCTA Master Plan of Arterial Highways
and Roadway Cross Sections

TABLE 3.14-1
DEFINITIONS FOR INTERSECTION LEVEL OF SERVICE

Unsignalized Intersections		Level of Service Grade	Signalized Intersections	
Description	**Average Control Delay per Vehicle (Seconds)**		**Critical Volume-to-Capacity Ratio**	**Description**
No delay for stop-controlled approaches.	≤10.0	A	≤0.60	Free Flow or Insignificant Delays: Operations with very low delay, when signal progression is extremely favorable and most vehicles arrive during the green light phase. Most vehicles do not stop at all.
Operations with minor delay.	>10.0 and ≤15.0	B	≥0.61 and ≤0.70	Stable Operation or Minimal Delays: Generally occurs with good signal progression and/or short cycle lengths. More vehicles stop than with LOS A, causing higher levels of average delay. An occasional approach phase is fully utilized.
Operations with moderate delays.	>15.0 and ≤25.0	C	≥0.71 and ≤0.80	Stable Operation or Acceptable Delays: Higher delays resulting from fair signal progression and/or longer cycle lengths. Drivers begin having to wait through more than one red light. Most drivers feel somewhat restricted.
Operations with increasingly unacceptable delays.	>25.0 and ≤35.0	D	≥0.81 and ≤0.90	Approaching Unstable with Tolerable Delays: Influence of congestion becomes more noticeable. Longer delays result from unfavorable signal progression, long cycle lengths, or high volume to capacity ratios. Many vehicles stop. Drivers may have to wait through more than one red light. Queues may develop, but dissipate rapidly, without excessive delays.
Operations with high delays, and long queues.	>35.0 and ≤50.0	E	≥0.91 and ≤1.00	Unstable Operation or Significant Delays: Considered to be the limit of acceptable delay. High delays indicate poor signal progression, long cycle lengths and high volume to capacity ratios. Individual cycle failures are frequent occurrences. Vehicles may wait through several signal cycles. Long queues form upstream from intersection.
Operations with extreme congestion, and with very high delays and long queues unacceptable to most drivers.	>50.0	F	>1.00	Forced Flow or Excessive Delays: Occurs with oversaturation when flows exceed the intersection capacity. Represents jammed conditions. Many cycle failures. Queues may block upstream intersections.

SOURCE: Transportation Research Board, *Highway Capacity Manual*.

Unsignalized Intersections: Based upon County of Orange requirements, study area intersections that are stop sign controlled with stop control on the minor street only are analyzed using the unsignalized intersection methodology of the HCM. For these intersections, the calculation of LOS is dependent on the occurrence of gaps occurring in the traffic flow of the main street. Using data collected describing the intersection configuration and traffic volumes at these locations, the LOS is determined based on the worst individual movement or movements (usually left turns from the minor street). LOS and associated average delay (expressed as seconds per vehicle) are shown in Table 3.14-1.

Roadway Segments: The F/TSP contains specific requirements for analyzing traffic on Santiago Canyon Road, and the TIM addresses the County's Traffic Level of Service Policy (described in the Regulatory Framework section, above). With respect to analytical procedures for Santiago Canyon Road, the TIM states that for Growth Management Element traffic analyses, the HCM methodology for rural two-lane highways shall be used.

The two-lane highway methodology in the HCM essentially addresses rural highways where the driving experience is heavily influenced by the ability to pass slower moving vehicles. The HCM methodology is based on a PTSF measurement, which is based strictly on the ability to pass rather than the capacity of the roadway. For the most part, passing on Santiago Canyon Road is not possible. The length of Santiago Canyon Road between Glenn Ranch Road and SR 241 is approximately 11.8 miles. Within that length, only about 0.63 mile of passing lane currently exists. The ability to pass is further limited due to the fact that there is a double yellow line or other striping constraints that prevents passing for the length of Santiago Canyon Road between Glenn Ranch Road and SR 241. Therefore, how much (i.e., what percentage) of the roadway's physical capacity is being used is more indicative of its operating conditions than the HCM PTSF methodology.

An evaluation of existing conditions along Santiago Canyon Road based upon the HCM's PTSF methodology yields a calculated LOS D, which does not comply with the above-cited County LOS policy, and which is not reflective of observed current operating conditions (determined on the basis of travel time runs). This evaluation is described in more detail in *Existing Conditions*. Further, because the HCM methodology does not reflect actual operating conditions of Santiago Canyon Road, an alternative analysis methodology is proposed (as part of the proposed amendments to the Orange County General Plan, see Section 3.9, *Land Use,* and Chapter 8.0, *Growth Inducing Impacts of the Project*, of this Draft EIR for further discussion of proposed amendments). No change in the LOS C policy for Santiago Canyon Road is proposed. Rather, it is proposed that potential traffic impacts to Santiago Canyon Road be analyzed in a manner similar to other jurisdictions throughout Orange County, and be reflective of the actual physical capacity of the roadway.

The traffic performance measure used for highway planning and design applications by Orange County and by all 34 cities within the County is the v/c ratio methodology. This methodology compares the traffic volume (for both existing and future conditions) to the capacity of a roadway segment and determines how much of the capacity is being used. This methodology has also been

adopted by OCTA within their CMP procedures. The County of Orange utilizes a roadway lane capacity of 1,700 vehicles per hour for each direction of travel per lane.

Bicycle Trails/Facilities

OCTA existing and proposed bikeway facilities adjacent to the project site are shown in **Figure 3.14-3**. OCTA categorizes commuter bikeways into three classifications:

- Class I – off-street paved bike paths
- Class II – on-street striped and signed bicycle lanes
- Class III – on-street shared lane bicycle routes

There are currently northbound and southbound Class II bike lanes on Santiago Canyon Road adjacent to the project site. Future plans to improve those bike lanes to Class I bike paths are proposed under the OCTA Commuter Bikeways Strategic Plan.

Public Transit

Public transit service in the County of Orange is provided by OCTA. However, there is no public transit service in the project area.

Existing Level of Service

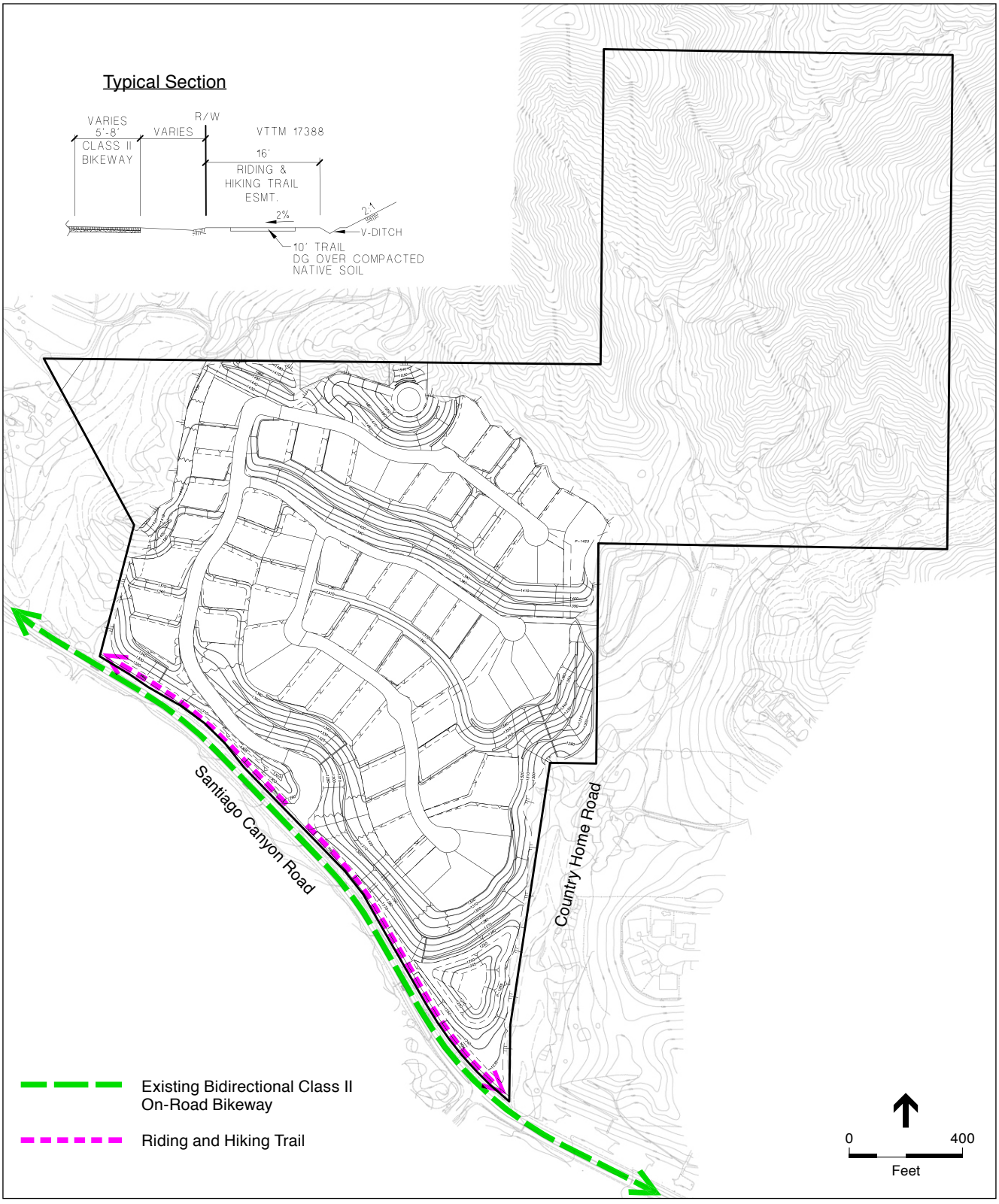
Study Intersections

Existing A.M. and P.M. peak-hour traffic turning movement volumes were collected in May 2011. As shown in **Table 3.14-2**, all study intersections are currently operating at acceptable levels of service during peak hours. The traffic count data and ICU and HCM calculation worksheets for existing conditions are provided in Appendix K.

Santiago Canyon Road

As discussed above, the F/TSP requires that the General Plan provisions for analyzing traffic on Santiago Canyon Road be followed. Specifically, those provisions state that traffic conditions are to be analyzed using the HCM methodology for rural two-lane highways, i.e., based on PTSF. As shown in **Table 3.14-3**, an evaluation of existing conditions along Santiago Canyon Road based upon the HCM's PTSF methodology yields a calculated LOS D during the A.M. and P.M. peak hours. In addition, the Recirculated Draft EIR for the Saddle Creek and Saddle Crest project (EIR No. 578, certified January 28, 2003) contained analysis of future (2020) "without project" traffic conditions along Santiago Canyon Road by Austin Foust and Associates. That analysis showed that using the HCM's PTSF methodology, the A.M. and P.M. peak-hour LOS on Santiago Canyon Road in 2020 was projected to be LOS E, without the previous Saddle Creek and Saddle Crest project.

Field observations of traffic operating conditions and travel time runs reveal that the calculated LOS is not reflective of actual current operating conditions. A summary of the travel time runs is shown in Appendix K.



SOURCE: Hunsaker & Associates, 2012.

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Figure 3.14-3
Bikeway and Trail Plan

TABLE 3.14-2
INTERSECTION ANALYSIS FOR EXISTING CONDITIONS

Intersection	Traffic Control [b]	Critical V/C Ratio or Delay (Sec.)[a]		Level of Service	
		AM Peak	PM Peak	AM Peak	PM Peak
Portola Parkway at					
• Glenn Ranch Road	Signal	0.550	0.560	A	A
• SR 241 Toll Road	Signal	0.413	0.594	A	A
Santiago Canyon Road at					
• Modjeska Grade Road	SSSC	14.3	14.4	B	B
• Project Access	N/A	N/A	N/A	N/A	N/A
• Live Oak Canyon Road	SSSC	16.1	18.9	C	C
El Toro Road at					
• Glenn Ranch Road	Signal	0.502	0.478	A	A
Marguerite Parkway / Saddleback Church at					
• El Toro Road	Signal	0.330	0.427	A	A
Portola Parkway / Santa Margarita Parkway at					
• El Toro Road	Signal	0.639	0.605	B	B

a Per the ICU methodology, overall volume-to-capacity ratio and level of service is shown for intersections controlled by traffic signals. Per the HCM (2000) methodology, critical delay (in seconds per vehicle) and LOS is shown for the worst side-street movement(s) at stop-sign controlled intersections.

b SSSC = Side-Street Stop-Control

SOURCE: RK Engineering Group, Inc., Inc., 2012.

Five travel runs in each direction were conducted during the A.M. and P.M. peak hours on the uninterrupted roadway segment of Santiago Canyon Road between Live Oak Canyon Road and Modjeska Grade Road. The travel runs revealed average travel speeds within this segment of 52.4 miles per hour during the A.M. peak hour and 51.0 miles per hour during the P.M. peak hour, indicative of little if any congestion or obstruction of flow.

Because the HCM methodology does not reflect actual operating conditions of Santiago Canyon Road, an alternative (v/c ratio) analysis methodology is proposed (as part of the proposed amendment to the Orange County General Plan). Existing A.M. and P.M. peak hour roadway segment volumes along Santiago Canyon Road were calculated based on the conversion of flow from existing peak hour turning movement volumes at the adjacent intersections. As shown in **Table 3.14-4**, an evaluation of existing conditions based upon the volume-to-capacity ratio analysis methodology indicates that Santiago Canyon Road is currently operating at LOS A for both northbound and southbound conditions during both the A.M. and P.M. peak hour (i.e., within the specified LOS C, as stipulated by the TIM).

TABLE 3.14-3
SANTIAGO CANYON ROAD SEGMENT ANALYSIS FOR EXISTING CONDITIONS
(*HIGHWAY CAPACITY MANUAL METHODOLOGY*)

	AM Peak Hour		PM Peak Hour	
Road Segment	**PTSF [a]**	**LOS**	**PTSF [a]**	**LOS**
North of Modjeska Grade Road	65.0%	C	71.2%	D
South of Modjeska Grade Road	67.6%	D	69.1%	D
North of Live Oak Canyon Road	67.0%	D	68.1%	D

a PTSF = Percent Time Spent Following, which is based on the ability to pass slower vehicles on a two-lane roadway.

SOURCE: RK Engineering Group, Inc., 2012.

TABLE 3.14-4
SANTIAGO CANYON ROAD SEGMENT ANALYSIS FOR EXISTING CONDITIONS
(*VOLUME-TO-CAPACITY RATIO METHODOLOGY*) [a]

		AM Peak Hour			PM Peak Hour		
Road Segment	**Capacity [b]**	**Volume**	**V/C Ratio [c]**	**LOS**	**Volume**	**V/C Ratio [c]**	**LOS**
North of Modjeska Grade Road							
• Northbound	1,700	322	0.19	A	378	0.22	A
• Southbound	1,700	292	0.17	A	328	0.19	A
North of Access to Project Site							
• Northbound	1,700	332	0.20	A	414	0.24	A
• Southbound	1,700	320	0.19	A	342	0.20	A
North of Live Oak Canyon Road							
• Northbound	1,700	268	0.16	A	438	0.26	A
• Southbound	1,700	357	0.21	A	293	0.17	A
North of Glenn Ranch Road [d]							
• Northbound	1,700	257	0.15	A	501	0.29	A
• Southbound	1,700	388	0.23	A	272	0.16	A

[a] LOS results are based on utilization of the proposed revised methodology.

[b] Capacity expressed as vehicles per hour.

[c] v/c ratio.

[d] This segment south of Live Oak Canyon Road is El Toro Road.

SOURCE: RK Engineering Group, Inc., 2012

3.14.2 Thresholds of Significance

According to Appendix G of the *CEQA Guidelines* and the County of Orange Environmental Analysis Checklist, a project would have a significant adverse effect on transportation and traffic if it would:

- Result in an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume-to-capacity ratio on roads, or congestion at intersections);
- Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths and mass transit;
- Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways;

  The acceptable level of service for intersections within the County of Orange is LOS D or better. A project's impact to intersections is determined to be significant if the project would cause an intersection's LOS to degrade from LOS D or better to LOS E or F, if the project would cause a change in v/c ratio greater than 0.01 at a signalized intersection that is operating at LOS E or F without the project, or if it would cause an individual movement at an unsignalized intersection to perform at LOS D or worse.

  With respect to Santiago Canyon Road, however, the acceptable level of service (for uninterrupted segments of Santiago Canyon Road) as identified in the Orange County TIM is LOS C. A project's impact to Santiago Canyon Road is determined to be significant if the project would cause the road segment LOS to degrade from LOS C or better to LOS D or worse, or if the project would cause the v/c ratio to increase by more than 0.01, if the roadway segment is operating at LOS D or worse without the project.
- Conflict with an applicable congestion management program, including, but not limited to level of service standard and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways;
- Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks;
- Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment);
- Result in inadequate emergency access;
- Result in inadequate parking capacity; or
- Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.

As discussed in the NOP/Initial Study (see Appendix A.1), the project site is not located near (within two miles of) a public airport or private airstrip. The project site is located approximately 18 miles from the nearest airport (John Wayne Airport) and would not result in an increase in air traffic levels or a change in location of air traffic patterns that would result in substantial safety risks. In addition, implementation of the proposed project or non-clustered scenario would

provide adequate parking capacity for the project-generated parking. No public comments were received regarding these thresholds during the 30-day NOP/Initial Study public scoping period. Therefore, no further analysis of the following criteria is required in the Draft EIR.

3.14.3 Methodology

Methodology used for the traffic analysis is discussed above under existing conditions and in the Saddle Crest Traffic Impact Study included in Appendix K of this Draft EIR.

3.14.4 Project Design Features

The following project design features have been included for the proposed project, and some would also apply to the non-clustered scenario. All project design features will be included in the Mitigation Monitoring and Reporting Program and will be monitored to ensure completion, in the same manner as the project's mitigation measures.

PDF-28 The existing bi-directional Class-II bikeway (on-road striped lanes with parking prohibited) within Santiago Canyon Road will be reconfigured within Santiago Canyon Road to accommodate the turning lanes being provided for the project entry and will vary between five to eight feet, and a 16-foot-wide easement would be provided along the Santiago Canyon Road frontage for the riding and hiking trail.

PDF-29 Interior private streets have been designed to incorporate rural street standards with no sidewalks and rolled curbs (except at the main entry where standard curbs will be used to control drainage).

PDF-30 The project has been designed to include a southbound left-turn lane (300-foot storage length), a northbound right-turn lane (320-foot storage length) and northbound acceleration lane at the project access point on Santiago Canyon Road.

PDF-31 Roads within the project site will be privately owned and maintained and an entry passage feature will be constructed at the project entry. The entry passage feature will be setback from Santiago Canyon Road at a distance that complies with the Orange County Standard Plan No. 1107 (i.e., a minimum of 100 feet from the curb line of Santiago Canyon Road), to provide adequate vehicle stacking space.

PDF-32 A stop sign, stop bar and stop legend will be provided on the project access road at Santiago Canyon Road.

3.14.4 Project Impacts

Impact 3.14.1: Substantial increase in traffic in relation to existing traffic load and capacity, or conflict with transportation plans, policies, or ordinances.

Significance Standard for Impact 3.14.1: Would the project result in an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume-to-capacity ratio on roads, or congestion at intersections), or conflict with an applicable plan, ordinance or policy establishing measures or effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths and mass transit?

Proposed Project

Trip Generation

As shown in **Table 3.14-5**, the proposed project would generate about 780 daily trips, with 58 vehicle trips (16 inbound and 42 outbound) during the A.M. peak hour and 78 vehicle trips (49 inbound and 29 outbound) during the P.M. peak hour. Trip generation rates for the proposed project were derived from local Orange County data and the Institute of Transportation Engineers (ITE) *Trip Generation*. All trips generated by the proposed project would enter/exit the project site via the one access road off Santiago Canyon Road. The proposed project would be developed on a vacant site that does not currently generate traffic, so all project-generated trips would be new trips on area roads.

TABLE 3.14-5
PROJECT TRIP GENERATION

		AM Peak Hour			PM Peak Hour			
Land Use		**In**	**Out**	**Total**	**In**	**Out**	**Total**	**Daily**
Single-Family Residential (65 units)	Rates [a]	0.24	0.65	0.89	0.76	0.44	1.20	12.00
	Trips	16	42	58	49	29	78	780

a The daily trip generation is based on the single family detached rate from the County of Orange Trip Generation Rate Summary (Daily Vehicle Trip Generation Rates, August 1982). The peak hour trip generation rates were taken from the F/TSP Traffic Analysis (Austin-Foust Associates, July 1991).

SOURCE: RK Engineering Group, Inc., 2012.

Trip Distribution and Assignment

Trip distribution represents the directional orientation of traffic to and from the project site. Trip distribution is heavily influenced by the geographical location of the site, the location of retail, business, and recreational opportunities, and the proximity to the regional freeway system. The directional orientation of project traffic was determined by evaluating existing and proposed land uses, and highways within the community (including those that are contemplated to be in-place over the next few years). See Appendix K for a graphical depiction of the outbound and inbound

trip distribution pattern for the project, and for existing-plus-project A.M. and P.M. peak-hour traffic turning movement volumes.

Modal Split

Modal split denotes the proportion of traffic generated by a project that would use different transportation modes, namely buses, cars, bicycles, motorcycles, trains, carpools, etc. The traffic-reducing potential of public transit and other alternative modes can be substantial. However, there is no public transit service in the project area.

As described above, there are currently northbound and southbound Class II bike lanes on Santiago Canyon Road adjacent to the project site. Future plans to improve those bike lanes to Class I bike paths are proposed under the OCTA Commuter Bikeways Strategic Plan. To not underestimate the project's trip generation, no use of bicycles for commute trips was assumed (i.e., a "worst-case" scenario for the traffic analysis).

Intersection Levels of Service for Existing Plus Project Conditions

Intersection levels of service for the existing network with the proposed project traffic volumes are shown in **Table 3.14-6**. In comparison to existing conditions (Table 3.14-2), v/c ratios and delays would increase, but all study area intersections would operate at acceptable LOS during peak hours. Based on the County's criteria for significance, the proposed project would have a less-than-significant impact under existing (baseline) conditions. ICU and HCM calculation worksheets for existing plus project conditions are provided in Appendix K.

Future Year Conditions

Future year traffic volumes (for Interim Year 2015 and Buildout Year 2035 conditions) were obtained from local area travel demand forecasting models developed by Austin Foust and Associates. The local area models are consistent with the model used by OCTA (and used in the adjacent City of Lake Forest), and account for future planned land uses and roadway improvements in the study area. This modeling data is conservative because several of the properties included in the model (i.e., Saddle Creek North, Saddle Creek South, O'Neill Oaks, Ferber Ranch and the Hafen Estate) have been sold for open space to the OCTA. For more information on the development of background (non-project) traffic volumes, see Appendix K.

TABLE 3.14-6
INTERSECTION ANALYSIS FOR EXISTING PLUS PROJECT CONDITIONS

Intersection	Traffic Control [b]	Critical V/C Ratio or Delay (Sec.)[a]		Level of Service	
		AM Peak	PM Peak	AM Peak	PM Peak
Portola Parkway at					
• Glenn Ranch Road	Signal	0.555	0.562	A	A
• SR 241 Toll Road	Signal	0.415	0.600	A	B
Santiago Canyon Road at					
• Modjeska Grade Road	SSSC	14.6	14.7	B	B
• Project Access	SSSC	14.0	15.6	B	B
• Live Oak Canyon Road	SSSC	17.0	20.3	C	C
Santiago Canyon Road / El Toro Road at					
• Glenn Ranch Road	Signal	0.510	0.497	A	A
Marguerite Parkway / Saddleback Church at					
• El Toro Road	Signal	0.332	0.431	A	A
Portola Parkway / Santa Margarita Parkway at					
• El Toro Road	Signal	0.640	0.606	B	B

a Per the ICU methodology, overall volume-to-capacity ratio and LOS is shown for intersections controlled by traffic signals. Per the HCM (2000) methodology, critical delay (in seconds per vehicle) and LOS is shown for the worst side-street movement(s) at stop-sign controlled intersections.

b SSSC = Side-Street Stop-Control

SOURCE: RK Engineering Group, Inc., 2012.

Interim (Year 2015) Level of Service Conditions – Study Intersections

In order to assess project impacts under Interim (Year 2015) traffic conditions, the Austin Foust and Associates 2015 traffic model volumes were used to establish conditions without the project, and project-generated trips were added to the "without project" volumes. A.M. and P.M. peak hour intersection turning movement volumes are presented in figures in Appendix K. Comparing LOS results in **Table 3.14-7** and **Table 3.14-8**, project traffic would increase v/c ratios and delays, but all study area intersections would operate at acceptable LOS during peak hours, with the exception of the intersection of Portola Parkway/Santa Margarita Parkway at El Toro Road, which would operate at LOS F (with an increase in the v/c ratio of 0.001) during the P.M. peak hour.

TABLE 3.14-7
INTERSECTION ANALYSIS FOR INTERIM YEAR (2015) WITHOUT PROJECT CONDITIONS

Intersection	Traffic Control [b]	Critical V/C Ratio or Delay (Sec.)[a]		Level of Service	
		AM Peak	PM Peak	AM Peak	PM Peak
Portola Parkway at					
• Glenn Ranch Road	Signal	0.609	0.646	B	B
• SR 241 Toll Road	Signal	0.474	0.595	A	A
Santiago Canyon Road at					
• Modjeska Grade Road	SSSC	15.1	14.6	C	B
• Project Access	n/a	N/A	N/A	N/A	N/A
• Live Oak Canyon Road	SSSC	26.0	28.7	D	D
Santiago Canyon Road / El Toro Road at					
• Glenn Ranch Road	Signal	0.633	0.709	B	C
Marguerite Parkway / Saddleback Church at					
• El Toro Road	Signal	0.449	0.562	A	A
Portola Parkway / Santa Margarita Parkway at					
• El Toro Road	Signal	0.691	1.039	B	F

a Per the ICU methodology, overall volume-to-capacity ratio and LOS is shown for intersections controlled by traffic signals. Per the HCM (2000) methodology, critical delay (in seconds per vehicle) and LOS is shown for the worst side-street movement(s) at stop-sign controlled intersections.

b SSSC = Side-Street Stop-Control

SOURCE: RK Engineering Group, Inc., 2012.

The increase in v/c ratio would be less than the County's criteria for significance (0.01 for LOS F), and therefore, the proposed project would have a less-than-significant impact under Interim (Year 2015) conditions. ICU and HCM calculation worksheets for Interim (Year 2015) conditions are provided in Appendix K.

TABLE 3.14-8
INTERSECTION ANALYSIS FOR INTERIM YEAR (2015) WITH PROJECT CONDITIONS

Intersection	Traffic Control [b]	Critical V/C Ratio or Delay (Sec.)[a]		Level of Service	
		AM Peak	PM Peak	AM Peak	PM Peak
Portola Parkway at					
• Glenn Ranch Road	Signal	0.611	0.648	B	B
• SR 241 Toll Road	Signal	0.475	0.601	A	B
Santiago Canyon Road at					
• Modjeska Grade Road	SSSC	15.4	14.9	C	B
• Project Access	SSSC	14.7	16.6	B	C
• Live Oak Canyon Road	SSSC	28.3	31.6	D	D
Santiago Canyon Road / El Toro Road at					
• Glenn Ranch Road	Signal	0.641	0.728	B	C
Marguerite Parkway / Saddleback Church at					
• El Toro Road	Signal	0.451	0.565	A	A
Portola Parkway / Santa Margarita Parkway at					
• El Toro Road	Signal	0.692	1.040	B	F

a Per the ICU methodology, overall v/c ratio and LOS is shown for intersections controlled by traffic signals. Per the HCM (2000) methodology, critical delay (in seconds per vehicle) and LOS is shown for the worst side-street movement(s) at stop-sign controlled intersections.

b SSSC = Side-Street Stop-Control

SOURCE: RK Engineering Group, Inc., 2012.

Buildout (Year 2035) Level of Service Conditions – Study Intersections

In order to assess project impacts under Buildout (Year 2035) traffic conditions, the Austin Foust and Associates buildout traffic model volumes were used to establish conditions without the project. The project-generated trips were then added to the "without project" volumes. A.M. and P.M. peak hour intersection turning movement volumes are presented in figures in Appendix K. Comparing LOS results in **Table 3.14-9** and **Table 3.14-10**, the following study intersections listed below are projected to operate at unacceptable LOS during peak hours:

- Santiago Canyon Road at Live Oak Canyon Road (LOS F during the A.M. and P.M. peak hours)
- El Toro Road at Glenn Ranch Road (LOS F during the P.M. peak hour)
- Portola Parkway / Santa Margarita Parkway at El Toro Road (LOS E during the A.M. peak hour; LOS F during the P.M. peak hour)

TABLE 3.14-9
INTERSECTION ANALYSIS FOR BUILDOUT (YEAR 2035) WITHOUT PROJECT CONDITIONS

Intersection	Traffic Control [b]	Critical V/C Ratio or Delay (Sec.)[a]		Level of Service	
		AM Peak	PM Peak	AM Peak	PM Peak
Portola Parkway at					
• Glenn Ranch Road	Signal	0.672	0.725	B	C
• SR 241 Toll Road	Signal	0.515	0.687	A	B
Santiago Canyon Road at					
• Modjeska Grade Road	SSSC	12.1	19.7	B	C
• Project Access	n/a	N/A	N/A	N/A	N/A
• Live Oak Canyon Road	SSSC	63.1	82.5	F	F
Santiago Canyon Road / El Toro Road at					
• Glenn Ranch Road	Signal	0.796	1.021	C	F
Marguerite Parkway / Saddleback Church at					
• El Toro Road	Signal	0.571	0.787	A	C
Portola Parkway / Santa Margarita Parkway at					
• El Toro Road	Signal	0.905	1.259	E	F

a Per the ICU methodology, overall v/c ratio and LOS is shown for intersections controlled by traffic signals. Per the HCM (2000) methodology, critical delay (in seconds per vehicle) and LOS is shown for the worst side-street movement(s) at stop-sign controlled intersections.

b SSSC = Side-Street Stop-Control

SOURCE: RK Engineering Group, Inc., 2012.

Other study intersections would operate at acceptable LOS. ICU and HCM calculation worksheets for Buildout (Year 2035) conditions are provided in Appendix K.

Based on the County's criteria for significance, the proposed project would contribute to a projected significant impact for Buildout (Year 2035) conditions at the following intersections:

- Santiago Canyon Road at Live Oak Canyon Road
- Santiago Canyon Road/El Toro Road at Glenn Ranch Road

Implementation of Mitigation Measures MM 3.14-1 (signalize the Santiago Canyon Road / Live Oak Canyon Road intersection) and MM 3.14-2 (install a second left-turn lane on eastbound Glenn Ranch Road at the El Toro Road / Glenn Ranch Road intersection) would restore the LOS at the intersections back to acceptable levels of service. Peak-hour traffic generated by the proposed project would represent up to about 7.0 and 3.6 percent of the growth in traffic from existing to Buildout (Year 2035) conditions at the Santiago Canyon Road / Live Oak Canyon Road and El Toro Road / Glenn Ranch Road intersections, respectively (see Appendix K for the project fair-share intersection contribution calculations).

TABLE 3.14-10
INTERSECTION ANALYSIS FOR BUILDOUT (YEAR 2035) WITH PROJECT CONDITIONS

Intersection	Traffic Control [b]	Critical V/C Ratio or Delay (Sec.)[a]		Level of Service	
		AM Peak	PM Peak	AM Peak	PM Peak
Portola Parkway at					
• Glenn Ranch Road	Signal	0.674	0.727	B	C
• SR 241 Toll Road	Signal	0.516	0.693	A	B
Santiago Canyon Road at					
• Modjeska Grade Road	SSSC	15.0	20.3	B	C
• Project Access	SSSC	19.3	23.1	C	C
• Live Oak Canyon Road	SSSC	71.2	97.2	F	F
Santiago Canyon Road / El Toro Road at					
• Glenn Ranch Road	Signal	0.804	1.039	D	F
Marguerite Parkway / Saddleback Church at					
• El Toro Road	Signal	0.574	0.790	B	C
Portola Parkway / Santa Margarita Parkway at					
• El Toro Road	Signal	0.906	1.259	E	F

a Per the ICU methodology, overall v/c ratio and LOS is shown for intersections controlled by traffic signals. Per the HCM (2000) methodology, critical delay (in seconds per vehicle) and LOS is shown for the worst side-street movement(s) at stop-sign controlled intersections.

b SSSC = Side-Street Stop-Control

SOURCE: RK Engineering Group, Inc., 2012.

Project traffic would increase the v/c ratio at the intersection of Portola Parkway Santa Margarita Parkway at El Toro Road, but the 0.001 increase in the v/c ratio would not exceed the County's criteria for significance (0.01 for LOS E), and the project would have a less-than-significant impact under Buildout (Year 2035) conditions.

Santiago Canyon Road Levels for Existing Plus Project Conditions

Santiago Canyon Road in the County is an existing high-speed two-lane roadway with limited access and no traffic signals throughout its length. It is classified as a primary arterial on the Master Plan of Arterial Highways, which would ultimately have a cross-section including two travel lanes in each direction separated by a median.

As discussed above, the F/TSP requires that a project's traffic impact be analyzed pursuant to the TIM methodology in the GMP Element of the General Plan for Santiago Canyon Road. The TIM provides that traffic conditions of roadway segments on Santiago Canyon Road are to be analyzed using the HCM methodology for rural two-lane highways, i.e., PTSF. As stated above (and shown in Table 3.14-3), an evaluation of existing conditions along Santiago Canyon Road based upon the HCM's PTSF methodology yields a calculated LOS D during the A.M. and P.M. peak hours, and addition of traffic generated by the proposed project would worsen the LOS D calculation under that methodology. However, field observations of traffic operating conditions

(and travel time runs, described above and in Appendix K) reveal that the LOS calculated based upon HCM PTSF methodology is not reflective of actual current operating conditions. Because the HCM methodology does not depict actual operating conditions of Santiago Canyon Road, an alternative (v/c ratio) analysis methodology is proposed (as part of the proposed amendment to the Orange County General Plan). Evaluation of roadway LOS based on the proposed v/c ratio methodology is presented below.

Existing A.M. and P.M. peak hour roadway segment volumes along Santiago Canyon Road were calculated based on the conversion of flow from existing peak hour turning movement volumes at the adjacent intersections. Road segment LOS for the existing network with the proposed project traffic volumes are shown in **Table 3.14-11.**

TABLE 3.14-11
SANTIAGO CANYON ROAD SEGMENT ANALYSIS FOR EXISTING PLUS PROJECT CONDITIONS [a]

		AM Peak Hour			PM Peak Hour		
Road Segment	**Capacity [b]**	**Volume**	**V/C Ratio [c]**	**LOS**	**Volume**	**V/C Ratio [c]**	**LOS**
North of Modjeska Grade Road							
• Northbound	1,700	335	0.20	A	387	0.23	A
• Southbound	1,700	297	0.17	A	343	0.20	A
North of Access to Project Site							
• Northbound	1,700	345	0.20	A	423	0.25	A
• Southbound	1,700	325	0.19	A	357	0.21	A
North of Live Oak Canyon Road							
• Northbound	1,700	279	0.16	A	472	0.28	A
• Southbound	1,700	386	0.23	A	313	0.18	A
North of Glenn Ranch Road [d]							
• Northbound	1,700	267	0.16	A	533	0.31	A
• Southbound	1,700	415	0.24	A	291	0.17	A

[a] LOS results are based on utilization of the proposed revised methodology.

[b] Capacity expressed as vehicles per hour.

[c] v/c ratio.

[d] This segment south of Live Oak Canyon Road is El Toro Road.

SOURCE: RK Engineering Group, Inc., 2012

In comparison to existing conditions (Table 3.14-4), v/c ratios would increase, but Santiago Canyon Road would continue to operate at LOS A for both the northbound and southbound directions during both A.M. and P.M. peak hours (i.e., within the specified LOS C, as stipulated by the TIM), and therefore, the impact of the proposed project would be less than significant with the General Plan amendments to the TIM. Calculation worksheets for existing plus project conditions are provided in Appendix K.

Future Year Conditions

Interim (Year 2015) Level of Service Conditions – Santiago Canyon Road

As shown in **Tables 3.14-12** and **3.14-13**, for Interim Year 2015 conditions without and with the project, Santiago Canyon Road would continue to operate at LOS A in both the northbound and southbound direction during both the A.M. and P.M. peak hour (i.e., within the specified LOS C as stipulated by the TIM), and therefore, the impact of the project would be less than significant with the General Plan amendments to the TIM. As shown in Table 3.14-3, existing conditions along Santiago Canyon Road based upon the HCM's PTSF methodology are LOS D during the A.M. and P.M. peak hours, and those LOS D conditions would be worsened by the increased traffic volumes in year 2015, and by addition of traffic generated by the proposed project.

TABLE 3.14-12
SANTIAGO CANYON ROAD SEGMENT ANALYSIS FOR INTERIM YEAR (2015) WITHOUT PROJECT [a]

		AM Peak Hour			PM Peak Hour		
Road Segment	**Capacity [b]**	**Volume**	**V/C Ratio [c]**	**LOS**	**Volume**	**V/C Ratio [c]**	**LOS**
North of Modjeska Grade Road							
• Northbound	1,700	348	0.20	A	408	0.24	A
• Southbound	1,700	315	0.19	A	354	0.21	A
North of Access to Project Site							
• Northbound	1,700	359	0.21	A	447	0.26	A
• Southbound	1,700	345	0.20	A	369	0.22	A
North of Live Oak Canyon Road							
• Northbound	1,700	370	0.22	A	570	0.34	A
• Southbound	1,700	490	0.29	A	400	0.24	A
North of Glenn Ranch Road [d]							
• Northbound	1,700	360	0.21	A	650	0.38	A
• Southbound	1,700	540	0.32	A	390	0.23	A

[a] LOS results are based on utilization of the proposed revised methodology.
[b] Capacity expressed as vehicles per hour.
[c] v/c ratio.
[d] This segment south of Live Oak Canyon Road is El Toro Road.

SOURCE: RK Engineering Group, Inc., 2012

TABLE 3.14-13
SANTIAGO CANYON ROAD SEGMENT ANALYSIS FOR INTERIM YEAR (2015) WITH PROJECT [A]

Road Segment	Capacity [b]	AM Peak Hour Volume	AM Peak Hour V/C Ratio [c]	AM Peak Hour LOS	PM Peak Hour Volume	PM Peak Hour V/C Ratio [c]	PM Peak Hour LOS
North of Modjeska Grade Road							
• Northbound	1,700	361	0.21	A	417	0.25	A
• Southbound	1,700	320	0.19	A	369	0.22	A
North of Access to Project Site							
• Northbound	1,700	372	0.22	A	456	0.27	A
• Southbound	1,700	350	0.21	A	384	0.23	A
North of Live Oak Canyon Road							
• Northbound	1,700	381	0.22	A	604	0.36	A
• Southbound	1,700	519	0.31	A	420	0.25	A
North of Glenn Ranch Road [d]							
• Northbound	1,700	370	0.22	A	682	0.40	A
• Southbound	1,700	567	0.33	A	409	0.24	A

[a] LOS results are based on utilization of the proposed revised methodology.
[b] Capacity expressed as vehicles per hour.
[c] v/c ratio.
[d] This segment south of Live Oak Canyon Road is El Toro Road.

SOURCE: RK Engineering Group, Inc., 2012

Buildout (Year 2035) Level of Service Conditions – Santiago Canyon Road

As shown in **Tables 3.14-14** and **3.14-15**, for Buildout Year 2035 conditions without and with the project, Santiago Canyon Road would continue to operate at LOS A in both the northbound and southbound direction during both the A.M. and P.M. peak hour (i.e., within the specified LOS C as stipulated by the TIM), and therefore, the impact would be less than significant with the General Plan amendments to the TIM. As shown in Table 3.14-3, existing conditions along Santiago Canyon Road based upon the HCM's PTSF methodology are calculated as LOS D during the A.M. and P.M. peak hours, and those LOS D results would be worsened by the increased traffic volumes in year 2035, and by addition of traffic generated by the proposed project.

Impact Determination: The proposed project would increase traffic volumes at area intersections and on Santiago Canyon Road. Project impacts to traffic capacity would be less than significant, and implementation of Mitigation Measures MM 3.14-1 through MM 3.14-3, which would reduce the project's contribution to cumulative (Year 2035) intersection impacts to a less than significant level. Peak-hour traffic generated by the proposed project would represent up to about 7.0 percent of the growth in traffic from existing to Buildout (Year 2035) conditions at the Santiago Canyon Road / Live Oak Canyon Road intersection (Mitigation Measure MM 3.14-1) and up to about and 3.6 percent at the El Toro Road / Glenn Ranch Road intersection (Mitigation Measure MM 3.14-2).

TABLE 3.14-14
SANTIAGO CANYON ROAD SEGMENT ANALYSIS FOR BUILDOUT (YEAR 2035) WITHOUT PROJECT [a]

		AM Peak Hour			PM Peak Hour		
Road Segment	**Capacity [b]**	**Volume**	**V/C Ratio [c]**	**LOS**	**Volume**	**V/C Ratio [c]**	**LOS**
North of Modjeska Grade Road							
• Northbound	1,700	477	0.28	A	559	0.33	A
• Southbound	1,700	432	0.25	A	485	0.29	A
North of Access to Project Site							
• Northbound	1,700	492	0.29	A	612	0.36	A
• Southbound	1,700	473	0.28	A	506	0.30	A
North of Live Oak Canyon Road							
• Northbound	1,700	540	0.32	A	840	0.49	A
• Southbound	1,700	830	0.79	A	530	0.31	A
North of Glenn Ranch Road							
• Northbound	1,700	540	0.32	A	940	0.55	A
• Southbound	1,700	880	0.52	A	490	0.29	A

[a] LOS results are based on utilization of the proposed revised methodology.
[b] Capacity expressed as vehicles per hour.
[c] v/c ratio.
[d] This segment south of Live Oak Canyon Road is El Toro Road.

SOURCE: RK Engineering Group, Inc., 2012

TABLE 3.14-15
SANTIAGO CANYON ROAD SEGMENT ANALYSIS FOR BUILDOUT (YEAR 2035) WITH PROJECT [a]

		AM Peak Hour			PM Peak Hour		
Road Segment	**Capacity [b]**	**Volume**	**V/C Ratio [c]**	**LOS**	**Volume**	**V/C Ratio [c]**	**LOS**
North of Modjeska Grade Road							
• Northbound	1,700	490	0.29	A	568	0.33	A
• Southbound	1,700	437	0.26	A	500	0.29	A
North of Access to Project Site							
• Northbound	1,700	505	0.30	A	621	0.37	A
• Southbound	1,700	478	0.28	A	521	0.31	A
North of Live Oak Canyon Road							
• Northbound	1,700	551	0.32	A	874	0.51	A
• Southbound	1,700	859	0.51	A	550	0.32	A
North of Glenn Ranch Road							
• Northbound	1,700	550	0.32	A	972	0.57	A
• Southbound	1,700	907	0.53	A	509	0.30	A

[a] LOS results are based on utilization of the proposed revised methodology.
[b] Capacity expressed as vehicles per hour.
[c] v/c ratio.
[d] This segment south of Live Oak Canyon Road is El Toro Road.

SOURCE: RK Engineering Group, Inc., 2012

See Appendix K for the project fair-share intersection contribution calculations. However, as the lead agency does not have jurisdiction over proposed improvements (the adversely affected intersections are located in the City of Lake Forest), these impacts associated with the proposed project cannot be assured to be mitigated to a level that is less than significant. Because the project would have some significant impacts that would not be mitigated to a less than significant level, if it is decided to approve the project, The Board of Supervisors would be required to adopt a statement of overriding considerations under CEQA Section 20181(b) and *CEQA Guidelines* Section 15093 determining that the project's benefits outweigh its significant impacts on the environment.

Non-Clustered Scenario

Similar to that described above for the proposed project, the non-clustered scenario would develop 65 houses on the project site. As the same number of single-family homes is proposed in this scenario, it would generate the same amount of vehicle trips on area roads. The non-clustered scenario would have the same project access and would be required to follow the same roadway design guidelines. Thus, the non-clustered scenario would have the same impacts to traffic LOS and conflicts with County traffic policies as the proposed project (i.e., less than significant impacts with mitigation at study intersections, and less than significant on Santiago Canyon Road with the General Plan amendments to the TIM).

Impact Determination: The non-clustered scenario would increase traffic volumes at area intersections and on Santiago Canyon Road. Project impacts to traffic capacity would be less than significant (no mitigation is necessary), and implementation of Mitigation Measures MM 3.14-1 through MM 3.14-3, which would reduce the project's contribution to cumulative (Year 2035) intersection impacts to a less than significant level. Peak-hour traffic generated by the proposed project would represent up to about 7.0 percent of the growth in traffic from existing to Buildout (Year 2035) conditions at the Santiago Canyon Road / Live Oak Canyon Road intersection (Mitigation Measure MM 3.14-1) and up to about and 3.6 percent at the El Toro Road / Glenn Ranch Road intersection (Mitigation Measure MM 3.14-2). See Appendix K for the project fair-share intersection contribution calculations. However, as the lead agency does not have jurisdiction over proposed improvements (the adversely affected intersections are located in the City of Lake Forest), these impacts associated with the proposed project cannot be assured to be mitigated to a level that is less than significant. Because the project would have some significant impacts that would not be mitigated to a less than significant level, if it is decided to approve the project, The Board of Supervisors would be required to adopt a statement of overriding considerations under CEQA Section 20181(b) and *CEQA Guidelines* Section 15093 determining that the project's benefits outweigh its significant impacts on the environment.

Impact 3.14.2: Exceed level of service standards established by congestion management agency, or conflict with congestion management program.

Significance Standard for Impact 3.14.2: Would the project exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways, or conflict with an applicable congestion management program, including, but not limited to level of service standard and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?

Proposed Project

Study Intersections. As described under Impact 3.14.1, in comparison to existing conditions, v/c ratios and delays would increase, but all study area intersections would operate at acceptable LOS during peak hours. Under Interim (Year 2015) traffic conditions, project traffic would increase v/c ratios and delays, but all study area intersections would operate at acceptable LOS during peak hours, with the exception of the intersection of Portola Parkway/Santa Margarita Parkway at El Toro Road, which would operate at LOS F (with an increase in the v/c ratio of 0.001) during the P.M. peak hour. Based on the County's criteria for significance, the proposed project would have a less-than-significant impact (would not cause exceedance of level of service standards) under existing (baseline) and interim (Year 2015) conditions.

Under Buildout (Year 2035) traffic conditions, the study intersections would operate at acceptable LOS, except the following, which are projected to operate at unacceptable LOS during peak hours:

- Santiago Canyon Road at Live Oak Canyon Road (LOS F during the A.M. and P.M. peak hours)
- El Toro Road at Glenn Ranch Road (LOS F during the P.M. peak hour)
- Portola Parkway / Santa Margarita Parkway at El Toro Road (LOS E during the A.M. peak hour; LOS F during the P.M. peak hour)

Based on the County's criteria for significance, the proposed project would contribute to a projected significant impact for Buildout (Year 2035) conditions at the following intersections:

- Santiago Canyon Road at Live Oak Canyon Road
- El Toro Road at Glenn Ranch Road

Project traffic would increase the v/c ratio (by 0.001) at the intersection of Portola Parkway / Santa Margarita Parkway at El Toro Road, but that increase would not exceed the County's criteria for significance, and the proposed project would have a less-than-significant impact.

Implementation of Mitigation Measures MM 3.14-1 (signalize the Santiago Canyon Road / Live Oak Canyon Road intersection) and MM 3.14-2 (install a second left-turn lane on eastbound Glenn Ranch Road at the El Toro Road / Glenn Ranch Road intersection) would restore the LOS at the intersections back to acceptable levels of service.

Santiago Canyon Road. As described under Impact 3.14.1, in comparison to existing, interim (Year 2015) and buildout (Year 2035) conditions, v/c ratios would increase, but Santiago Canyon Road would continue to operate at LOS A for both the northbound and southbound directions during both A.M. and P.M. peak hours (i.e., within the specified LOS C, as stipulated by the TIM), and therefore, the impact of the proposed project would be less than significant with the General Plan amendments to the TIM.

Impact Determination: The proposed project would increase traffic volumes at area intersections and on Santiago Canyon Road. Project impacts to LOS standards would be less than significant (no mitigation is necessary), and implementation of Mitigation Measures MM 3.14-1 and MM 3.14-2 would reduce the project's contribution to cumulative (Year 2035) intersection LOS impacts to a less than significant level. However, as the lead agency does not have jurisdiction over proposed improvements (the adversely affected intersections are located in the City of Lake Forest), these impacts associated with the proposed project cannot be assured to be mitigated to a level that is less than significant. Because the project would have some significant impacts that would not be mitigated to a less than significant level, if it is decided to approve the project, The Board of Supervisors would be required to adopt a statement of overriding considerations under CEQA Section 20181(b) and *CEQA Guidelines* Section 15093 determining that the project's benefits outweigh its significant impacts on the environment.

Non-Clustered Scenario

The non-clustered scenario would develop same number of houses on the project site, and therefore, it would generate the same amount of vehicle trips on area roads. The non-clustered scenario would have the same impacts to traffic LOS and conflicts with County traffic policies as the proposed project (i.e., less than significant impacts with mitigation at study intersections, and less than significant on Santiago Canyon Road with the General Plan amendments to the TIM.

Impact Determination: The non-clustered scenario would increase traffic volumes at area intersections and on Santiago Canyon Road. Project impacts to LOS standards would be less than significant, and implementation of Mitigation Measures MM 3.14-1 and MM 3.14-2 would reduce the project's contribution to cumulative (Year 2035) intersection LOS impacts to a less than significant level. However, as the lead agency does not have jurisdiction over proposed improvements (the adversely affected intersections are located in the City of Lake Forest), these impacts associated with the non-clustered scenario cannot be assured to be mitigated to a level that is less than significant. Because the project would have some significant impacts that would not be mitigated to a less than significant level, if it is decided to approve the project, The Board of Supervisors would be required to adopt a statement of overriding considerations under CEQA Section 20181(b) and *CEQA Guidelines* Section 15093 determining that the project's benefits outweigh its significant impacts on the environment.

Impact 3.14.3: Increase traffic hazards.

Significance Standard for Impact 3.14.3: Would the project substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

Proposed Project

Site Access

The project site would be served by one access road off Santiago Canyon Road. A stop sign with appropriate markings would be provided on the access road (PDF-32). As shown in Figures 2.10 and 2.11, the primary internal road would have a curb-to-curb width of 50 feet, and would widen to 72 feet at its intersection with Santiago Canyon Road.

As part of the proposed project, a northbound right-turn lane and a southbound left-turn lane would be constructed on Santiago Canyon Road at the project access point (see PDF-30). The proposed site access is located 1,100 feet from the driveway to the west of the project, a sufficient distance to provide adequate spacing for the proposed northbound right-turn lane without adversely affecting the project's entry. It is anticipated that separate left-turn and right-turn lanes would be provided for traffic exiting the site. Evaluation of the project access intersection with Santiago Canyon Road (see Appendix K) indicate that available sight distances would be adequate with minor trimming of existing landscaping that encroaches into the public right-of-way on the south side of Santiago Canyon Road. In addition, Mitigation Measure MM 3.14-4 would ensure that the proposed project includes sight distance requirement per Standard Plan No. 1117.

The project site access design would not introduce any traffic safety concerns. As shown in Tables 3.14-5, 3.14-7, and 3.14-9, traffic operating conditions would be good (LOS C or better) at the project access intersection with Santiago Canyon Road.

Gateway Queuing Analysis

The Orange County Standard Plan No. 1107 was compared to the proposed project's site plan with regards to the project's entry passage feature. According to Standard Plan No. 1107, entry passage features shall be set back from the near curb line of any public street to provide a minimum 100 feet of storage for entering vehicles to stack without interfering with through traffic. Based on the proposed project's estimated trip generation (see Table 3.14-5), the estimated worst-case total length of the queue would be 65 feet during peak hours. The project's entry passage feature is currently proposed to be located about 160 feet from the curb line of Santiago Canyon Road. Final project design could change its exact location, but Project Design Feature PDF-31 would ensure that the gateway location would be adequate to allow for cars to queue without stacking onto Santiago Canyon Road. Sight distances at all intersections internal to the project site would be reviewed at time of project design to ensure adequate visibility is provided.

Impact Determination: The proposed project would introduce new external and internal site access. Existing and proposed roadways would not introduce hazardous design features or uses, and Mitigation Measure MM 3.14-4 and Project Design Features PDF-30, PDF-31, and PDF-32 would reduce any potential impacts. Impacts would be less than significant, and no mitigation is necessary.

Non-Clustered Scenario

Similar to that described above for the proposed project, the non-clustered scenario would develop 65 houses on the project site. As the same number of single-family homes is proposed in this scenario, it would generate the same amount of vehicle trips on area roads. The non-clustered scenario would have a similar project access (same location, but with no entry passage feature) and would be required to follow the same roadway design guidelines. Thus, the non-clustered scenario would have the same less-than-significant impacts to traffic hazards as the proposed project.

Impact Determination: The non-clustered scenario would introduce new external and internal site access. Existing and proposed roadways would not introduce hazardous design features or uses, and Mitigation Measure MM 3.14-4 and Project Design Features PDF-30, PDF-31, and PDF-32 would reduce any potential impacts. Impacts would be less than significant, and no mitigation is necessary.

Impact 3.14.4: Inadequate emergency access.

Significance Standard for Impact 3.14.4: Would the project result in inadequate emergency access?

Proposed Project

The proposed project would involve the construction of new housing, roads, and turning lanes to access the project site. As stated above, the turning lanes would provide adequate access to the project site from a traffic operations and safety standpoint. Therefore, the proposed project would not alter an adopted emergency response plan or evacuation plan.

The proposed project could result in short-term temporary impacts on street traffic adjacent to the proposed site during construction activities. Any such impacts would be limited to the construction period and would affect only adjacent streets or intersections. However, the short-term impacts would not interfere with emergency response vehicles (e.g., fire, police, or ambulance). Operation would introduce new internal access roads that would be required to meet emergency access standards. Mitigation Measures MM 3.7-1 and MM 3.7-2 (see Section 3.7, *Hazards and Hazardous Materials,* of this Draft EIR) requires all property owners to notify OCSD, OCFA, and County of Orange of all construction activities that would impede roadways in the project area and require coordination with emergency service providers, which would

reduce impacts to emergency response and access associated with construction to a less than significant level.

Impact Determination: The proposed project would provide adequate emergency access to the site. In addition, Mitigation Measures MM 3.7-1 and MM 3.7-2 (see Section 3.7, *Hazards and Hazardous Materials,* of this Draft EIR) would further reduce impacts. Therefore, impacts would be less than significant.

Non-Clustered Scenario

Similar to that described above for the proposed project, the non-clustered scenario would develop 65 houses on the project site. As the same number of single-family homes is proposed in this scenario, it would generate the same amount of vehicle trips on area roads. The non-clustered scenario would include turning lanes to access the project site, similar to the project, which would provide adequate access to the project site from a traffic operations and safety standpoint. Thus, the non-clustered scenario would have the same less-than-significant impacts to emergency access as the proposed project.

Impact Determination: The non-clustered scenario would provide adequate emergency access to the site. In addition, Mitigation Measures MM 3.7-1 and MM 3.7-2 (see Section 3.7, *Hazards and Hazardous Materials,* of this Draft EIR) would further reduce impacts. Therefore, impacts would be less than significant.

Impact 3.14.5: Conflict with alternative transit plans or policies.

Significance Standard for Impact 3.14.5: Would the project conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?

Proposed Project

As described in *Environmental Setting*, currently there is no public transit service in the project area, and there are currently northbound and southbound Class II bike lanes on Santiago Canyon Road adjacent to the project site. The OCTA Transit System Study (updated July 2011) does not identify plans to extend public transit service to the project area. Future plans to improve bike lanes to Class I bike paths are proposed under the OCTA Commuter Bikeways Strategic Plan. The proposed project would neither directly or indirectly eliminate existing or planned alternative transportation corridors or facilities (e.g., bike paths, lanes, bus turnouts, etc.). It would relocate the existing bike lane (in line with improvements at the project access) and would install a riding and hiking trail (PDF-28). In addition, the project would not include changes in policies or programs that support alternative transportation, and it would not construct facilities in locations in which future alternative transportation facilities are planned. Thus, there would be a less-than-significant transportation/traffic impact related to alternative transportation. See also Section 3.13, *Recreation,* of this Draft EIR for a discussion of recreational facilities.

Impact Determination: The proposed project would not conflict with any adopted policies or programs related to public transit, bicycle, or pedestrian facilities. Project Design Feature PDF-28 would reduce any potential impacts. Impacts would be less than significant, and no mitigation is necessary.

Non-Clustered Scenario

Similar to that described above for the proposed project, the non-clustered scenario would neither directly or indirectly eliminate existing or planned alternative transportation corridors or facilities (e.g., bike paths, lanes, bus turnouts, etc.), and would not include changes in policies or programs that support alternative transportation, and it would not construct facilities in locations in which future alternative transportation facilities are planned. Thus, the non-clustered scenario would have the same less-than-significant impacts to alternative transportation as the proposed project.

Impact Determination: The non-clustered scenario would not conflict with any adopted policies or programs related to public transit, bicycle, or pedestrian facilities. Project Design Feature PDF-28 would reduce any potential impacts. Impacts would be less than significant, and no mitigation is necessary.

3.14.6 Cumulative Impacts

The geographic scope of this impact area lies within the portions of the County of Orange that include the study intersections and segments of Santiago Canyon Road analyzed for direct project impacts, and that contain land for cumulative projects. The roadway network on which residents (as well as visitors and service vehicles) would travel to and from the site consists of regional highways and local roadways.

The traffic analysis analyzed future (Year 2035) traffic conditions, which took into account cumulative projects and regional growth. As discussed above (Impacts 3.14.1 and 3.14.2), none of the study area intersections would operate at an unacceptable LOS after mitigation, and Santiago Canyon Road would operate acceptably with adoption of the amended methodology. The contribution of the proposed project or the non-clustered scenario to intersection impacts would be reduced to a less-than-significant level with implementation of mitigation measures identified below. Therefore, cumulative traffic impacts associated with either the proposed project or the non-clustered scenario would be less than significant.

Impact Determination: The proposed project would add new vehicle trips to the cumulative geographic area. Mitigation Measures MM 3.14-1 through MM 3.14-3 would reduce the project's contribution to cumulative (Year 2035) intersection impacts to a less than significant level. However, as the lead agency does not have jurisdiction over proposed improvements (the adversely affected intersections are located in the City of Lake Forest), these impacts associated with the proposed project or non-clustered scenario cannot be assured to be mitigated to a level that is less than significant. Because the project would have some significant impacts that would

not be mitigated to a less than significant level, if it is decided to approve the project, The Board of Supervisors would be required to adopt a statement of overriding considerations under CEQA Section 20181(b) and *CEQA Guidelines* Section 15093 determining that the project's benefits outweigh its significant impacts on the environment.

3.14.7 Mitigation Measures

MM 3.14-1 Prior to project occupancy, the project applicant shall contribute their fair share of the cost to install traffic signals and signal-related equipment at the intersection of Santiago Canyon Road and Live Oak Canyon Road.

MM 3.14-2 Prior to project occupancy, the project applicant shall contribute their fair share of the cost to the following improvements at the intersection of El Toro Road and Glenn Ranch Road:

- Eastbound Glenn Ranch Road: Install a second left turn lane
- Westbound Glenn Ranch Road: Install a second receiving lane

MM 3.14-3 Prior to the issuance of building permits, the applicant shall pay fees for the Major Thoroughfare and Bridge Fee Program listed below, in a manner meeting the approval of the Manager, Permit Services.

a. Foothill/Eastern Transportation Corridor
b. Foothill Circulation Phasing Program
c. Santiago Canyon Road

MM 3.14-4 Prior to the issuance of any grading permits, the applicant shall provide adequate sight distance per Standard Plan 1117 at all street intersections, in a manner meeting the approval of the Manager, Permit Services. The applicant shall make all necessary revisions to the plan to meet the sight distance requirement such as removing slopes or other encroachments from the limited use area in a manner meeting the approval of the Manager, Subdivision and Grading Services.

3.14.8 Impact Determination

The proposed project and the non-clustered scenario would have the same impact determinations for increased traffic volumes at area intersections and on Santiago Canyon Road. Regarding Impact 3.14.1, project impacts to traffic capacity would be less than significant (no mitigation is necessary), and Mitigation Measures MM 3.14-1 and MM 3.14-2 would reduce the project's contribution to cumulative (Year 2035) intersection impacts to a less than significant level. Regarding Impact 3.14.2, project impacts to LOS standards would be less than significant (no mitigation is necessary), and implementation of Mitigation Measures MM 3.14-1 and MM 3.14-2 would reduce the project's contribution to cumulative (Year 2035) intersection LOS impacts to a less than significant level. However, as the lead agency does not have jurisdiction over proposed improvements (the adversely affected intersections are located in the City of Lake Forest), these impacts associated with the proposed project cannot be assured to be mitigated to a level that is

less than significant. Because the project would have some significant impacts that would not be mitigated to a less than significant level, if it is decided to approve the project, The Board of Supervisors would be required to adopt a statement of overriding considerations under CEQA Section 20181(b) and *CEQA Guidelines* Section 15093 determining that the project's benefits outweigh its significant impacts on the environment.

The proposed project and non-clustered scenario would introduce new external and internal site access (Impact 3.14.3). Existing and proposed roadways would not introduce hazardous design features or uses, and Project Design Features PDF-30 and PDF-31 would reduce any potential impacts. Impacts would be less than significant, and no mitigation is necessary.

Regarding Impact 3.14.4, the proposed project and non-clustered scenario would provide adequate emergency access to the site. Impacts would be less than significant, and no mitigation is necessary.

The proposed project and non-clustered scenario would not conflict with any adopted policies or programs related to public transit, bicycle, or pedestrian facilities (Impact 3.14.5). Impacts would be less than significant, and no mitigation is necessary.

Lastly, the proposed project and non-clustered scenario would add new vehicle trips to the cumulative geographic area. Implementation of Mitigation Measures MM 3.14-1 and MM 3.14-2 would reduce the project's contribution to cumulative (Year 2035) intersection impacts to a less than significant level. However, as the lead agency does not have jurisdiction over proposed improvements (the adversely affected intersections are located in the City of Lake Forest), these impacts associated with the proposed project or non-clustered scenario cannot be assured to be mitigated to a level that is less than significant. Because the project would have some significant impacts that would not be mitigated to a less than significant level, if it is decided to approve the project, The Board of Supervisors would be required to adopt a statement of overriding considerations under CEQA Section 20181(b) and *CEQA Guidelines* Section 15093 determining that the project's benefits outweigh its significant impacts on the environment.